

# The Dynamic Approach to Arthritis

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OF all chronic diseases, arthritis is second only to nervous and mental diseases as a cause of illness in the United States (1). It causes more years of disability than do all types of accidents and disables seven times as many persons as does cancer (2). More than 10 million persons in this country suffer from some type of rheumatic complaint, and 2½ million of these have had to change or stop their work because of their disease (3). It is reliably estimated that 147,000 persons in the United States are invalidated each year from rheumatic diseases (4).

While rheumatic diseases exact a high toll in morbidity, their mortality is extremely low; the reservoir of persons so afflicted is thus ever growing. In the face of the rising incidence of chronic and degenerative diseases, the socio-economic gravity of this situation is readily apparent. Rheumatic diseases lead all others in crippling and in economic loss. They account for a loss of 97 million man-days and a quarter of a billion dollars in wages annually in the United States (1). Finally, it should be remembered that arthritis is not a disease of the aged only, but that it may affect infants and adolescents as well. The two most common and most crippling forms, rheumatoid arthritis and rheumatoid spondylitis, preponderantly affect persons in their third and fourth decades.

Arthritis as a diagnosis is nonspecific; by definition it means "inflammation of a joint." The types of arthritis are legion, probably numbering more than 100, and the treatment

and the prognosis vary greatly among these many types. In considering rehabilitation it is important, therefore, that an etiological as well as a pathological diagnosis be established before medical, physical, or vocational measures of treatment are undertaken. The majority of cases fall within 7 major categories, and 2 types, rheumatoid and degenerative joint disease, account for 70 percent of the cases (6).

Ten years ago, arthritis was a disease of unknown etiologies and of dismally poor treatment prognoses. The introduction of steroid therapy in 1948 catalyzed a renaissance of interest and research that in a decade has developed more basic knowledge, better diagnostic aids, and more effective treatment measures than were developed in the preceding century. While much remains to be learned, great strides have been made. Amidst this optimism of progress has come a change in attitude toward the crippled arthritic, an attitude crystallized by favorable results attained in both physical and vocational rehabilitation studies. Because of these studies, crippled arthritics can no longer be considered negatively as candidates for rehabilitation, for with proper selection and careful treatment many can be salvaged for productive lives (5).

As with all chronic diseases, the effects of arthritis ramify far beyond the physical sphere. Though the pathological affliction is primarily one of damage to intra-articular structures, the consequent disability imposes restrictions and demands adjustments in all areas of living: physical, social, economic, psychological, vocational, and recreational. In considering such a patient for rehabilitation, therefore, evaluation and treatment must be directed toward all the many facets of his condition. Proper diag-

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nosis and appropriate medical therapy for control of the arthritic process are, of course, of primary importance. In addition, it is imperative that the patient's functional capacity be assessed and his psychosocial status investigated. Limitation of joint ranges of motion, weakness within muscles, and functional proficiency in the performance of activities essential to independent living must be specifically tested. Further, the psychological, social, economic, and vocational aspects must be studied in detail.

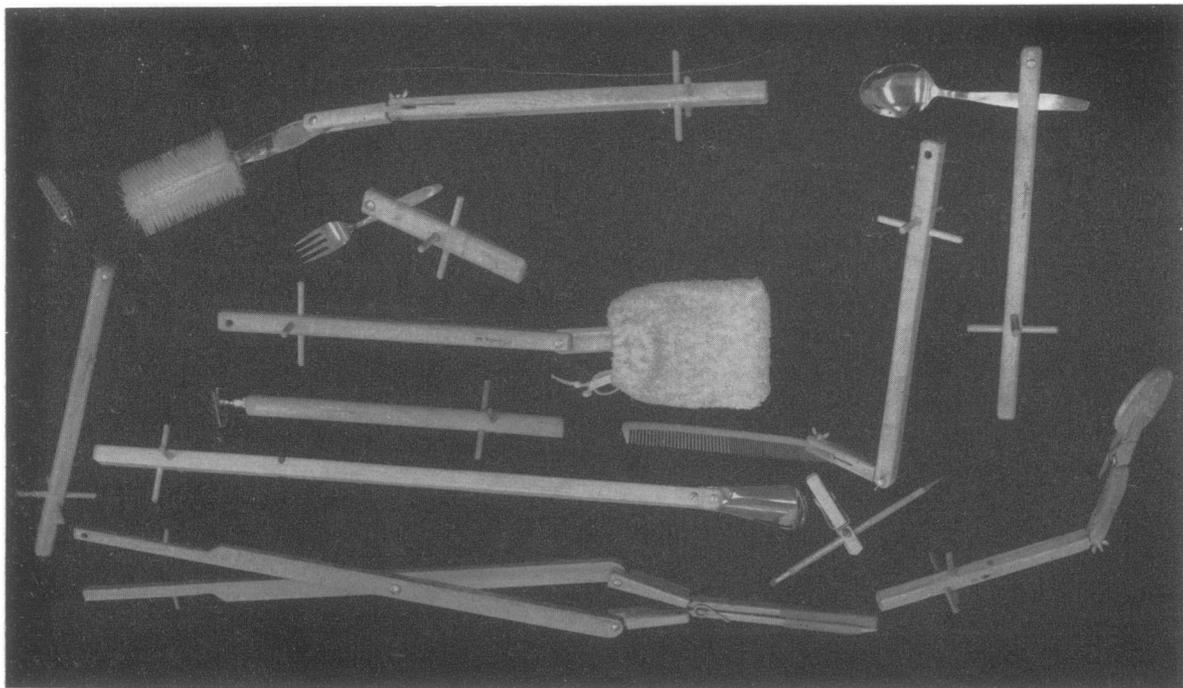
The extent of the problem of rehabilitation for the individual patient, then, is in direct proportion to the deficits in the various areas, and treatment must be directed toward alleviation of these various deficits. Rehabilitation may consist only of proper job placement, or it may involve, for a severely disabled patient, hospitalization and intensive full-day treatment with physical therapy, occupational therapy, remedial exercise, functional training, psychological and psychiatric assistance, vocational guidance, and job retraining.

The degree of success in the rehabilitation of the disabled arthritic is influenced by eight major factors:

*Type of arthritis.* Prognosis varies consider-

ably among the different types of arthritis, which range from the static involvement of a single joint to the fulminating migratory type accompanied by marked systemic manifestations in addition to the joint pathology. These are extremes, but they indicate the wide prognostic variations.

*Extent of damage within joints.* Arthritis results in destructive changes within the involved joints. These changes impair the mechanical integrity of the joint and, in direct proportion to the impairment, modify the tolerance of the joint for physical activity. Since weight-bearing joints are "workhorse" joints, damage to a knee or a hip, for example, will be more restrictive than a similar degree of damage in an elbow or wrist, which is concerned more with dexterity and prehension. Physical activity for a patient must be maintained within the pain tolerance of the joints to prevent further deterioration from overuse. Correction of deformity, especially in weight-bearing joints, building muscle power to a maximum through remedial exercises, and use of braces may often increase a joint's tolerance for activity. The extent of damage, however, remains an important modifying factor.



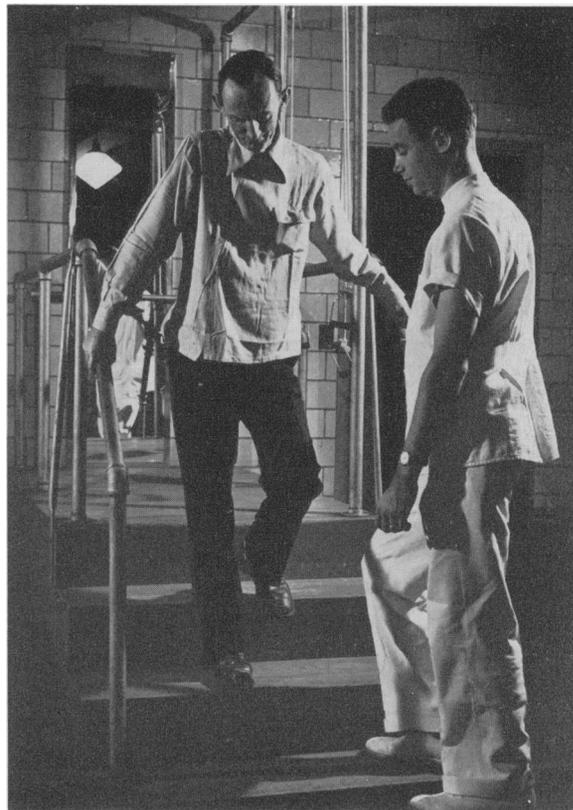
**Devices with added length enable the arthritic patient to perform many daily self-care activities.**

*Adequacy of medical therapy.* For those types of arthritis that may be improved through medical therapy, the degree to which the process may be controlled directly modifies the rehabilitation goals. Chronic gouty arthritis, for example, can usually be improved considerably through drug therapy. By means of steroid therapy, most cases of rheumatoid arthritis can be partially, if not almost completely, controlled. Disseminated lupus erythematosus, on the other hand, presents a much more complex and difficult treatment problem, and the ineffectiveness of medical treatment may be reflected directly in ineffective total rehabilitation.

*Motivation of the patient.* It is easy to establish goals for an arthritic patient that are compatible with his physical and intellectual capacities, but it is not so easy to know that the goals are within the scope of his motivation. To help the patient develop motivation, every effort should be exerted at the start of a rehabilitation program to give him a thorough understanding of arthritis as a disease, of treatment limitations, and of reasonable goals to be expected, and to instill in him the insight to appreciate that much of what can be accomplished can be done only through hard work and cooperation on his part. Patients who cannot be approached on such realistic ground will be failures in rehabilitation programs and should not be accepted for treatment (6).

*Applicability of self-help devices.* Among patients with deformities or restrictions in joints which mechanically prevent the performance of essential functions, it is often possible to bypass such impediments with special gadgets or self-help devices (see illustration). More than 300 special devices are currently available to assist the arthritic in eating, dressing, personal hygiene, ambulation, and transportation (7). These range from long-handled combs for patients who cannot reach their heads to motorized wheelchairs for those with arms too crippled to propel a standard wheelchair. The intelligent selection of such devices for the disabled patient often can open wide new vistas of self-sufficiency and independence.

*Functional training.* While joint ranges of motion, muscle power, and the joint's tolerance



**An arthritic patient is retrained in ambulation and elevation activities.**

for activity are rough indexes of a patient's functional capacity, they have no significance unless they can be utilized in performance of function. Functional training, therefore, is an important part of a patient's daily treatment program. The human body as a machine is a grossly inefficient mechanism, probably less than 25 percent efficient. Thus, even in the face of severe mechanical disabilities patients may be trained to a considerably higher degree of efficiency to compensate for irreversible physical deficits.

*Corrective orthopedic surgery.* It is no longer felt that arthritic patients should wait for their disease to reach far-advanced stages before being offered the advantages of corrective orthopedic surgery. In fact, from a standpoint of protection of joints against additional mechanical wearing, corrective surgical procedures are at times urgently indicated. The correction of a knee flexion contracture or a hip deformity, for example, may appreciably expand a rehabilitation goal.

*Social, economic, and vocational factors.* Since chronic disease ramifies its effects into all areas of living, total rehabilitation implies assistance in the solution of these facets of the problem. Success depends upon the resources of the patient and the degree of active assistance afforded the patient by the social worker and the vocational counsellor. The most difficult goal to attain in the rehabilitation of the arthritic is job placement. Even in this sphere, however, it has been demonstrated that through careful assessment of psychological and vocational aptitudes, plans for job placement or job retraining compatible with the physical disability can usually be worked out (8).

### Summary

The patient disabled with arthritis frequently may be successfully returned to productive and independent living. Rehabilitation, however, must be directed toward the total problem created by the disease. The success of treatment may be predicted in terms of eight major modifying factors. Although a difficult prob-

lem, the disabled arthritic is by no means beyond help if he is dynamically dealt with.

### REFERENCES

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## Public Health Mission to the U.S.S.R.

Five public health physicians from the United States recently spent a month in the U.S.S.R. on an exchange mission headed by Dr. Thomas Parran, dean, Graduate School of Public Health, University of Pittsburgh, and former Surgeon General of the Public Health Service. The visit lasted from August 13 into September of 1957.

Arranged by the Public Health Service in cooperation with the U. S. Department of State, the mission cultivated relationships between public health and medical leaders in both countries.

The itinerary included administrative headquarters, industrial and agricultural health departments, hospitals, urban and rural dispensaries, industrial medical stations, research institutes, and medical schools, in 5 of the 15 republics of the U.S.S.R. in Europe and Asia.

A reciprocal Soviet Union public health mission arrived in the United States in October for a month's stay.

With Dr. Parran on the mission were Dr. Malcolm Merrill, director of public health, California State Department of Public Health; Dr. Otis L. Anderson, Assistant Surgeon General, Public Health Service; Dr. H. van Zile Hyde, chief, Division of International Health, Public Health Service; and Dr. Leonid Snegeriff, associate professor, department of public health practice, Harvard School of Public Health.